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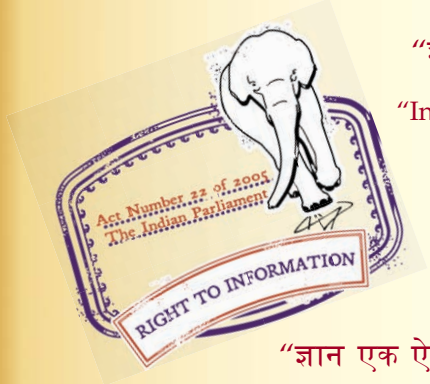

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IS : 3276 - 1966
(Reaffirmed 2002)

Indian Standard

DIMENSIONS FOR MECHANICAL TURNING ARRANGEMENTS FOR STEEL COWL VENTILATORS

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DIMENSIONS FOR MECHANICAL TURNING ARRANGEMENTS FOR STEEL COWL VENTILATORS

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 25 February 1966, after the draft finalized by the Marine Engineering and Shipbuilding Sectional Committee had been approved by the Mechanical Engineering Division Council.

0.2 This standard is one of a series of Indian Standards on cowl ventilators. Other standards in the series are:

IS : 3271-1966 General requirements for steel cowl ventilators with detachable components

IS : 3272-1966 Dimensions for oval-head steel cowl ventilators

IS : 3273-1966 Dimensions for circular-head steel cowl ventilators

IS : 3275-1966 Dimensions for accessories for steel cowl ventilators

IS : 3277- Dimensions for coamings for steel cowl ventilators (under preparation)

IS : 3278-1966 Dimensions for detachable coaming covers and wire mesh grids for steel cowl ventilators

0.3 In the preparation of this standard, assistance has been derived from the following standards issued by the Association Francaise de Normalisation:

NF J46-140 : 1951 Manches a air—commande par roues dentées ensemble. (Ventilators—toothed wheel turning arrangement-assembly)

NF J46-144 : 1951 Manches a air—commande par roues dentées—couronne et pignon. (Ventilators—toothed wheel turning arrangement—driving pinion)

NF J46-146 : 1951 Manches a air—commande par roues dentées ou par cardan—galet de guidage et tige de manoeuvre. (Ventilators—toothed wheel turning arrangement control rod—details of guide roller and turning handle)

NF J46-148 : 1951 Manches a air—commande par roues dentées—crapaudine et pivot. (Ventilators—toothed wheel turning arrangement, central guide tube and pivot bearings)

NF J46-150 : 1951 Manches a air—commande par roues dentées—collier de fixation due tube de commande. (Ventilators—toothed wheel turning arrangement—fixing clamp and central guide tube)

0.4 Indian Standard general requirements for steel cowl ventilators with detachable components (IS : 3271-1966) is a necessary adjunct to this standard.

0.5 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test, shall be rounded off in accordance with IS : 2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This standard specifies the dimensions for two types of mechanical turning arrangements, namely, Type A and Type B, for steel cowl ventilators of nominal sizes 400 mm and above.

2. MECHANICAL TURNING ARRANGEMENT, TYPE A

2.1 The assembly and details of Type A mechanical turning arrangement shall be as shown in Fig. 1.

3. MECHANICAL TURNING ARRANGEMENT, TYPE B

3.1 The nomenclature and assembly of Type B mechanical turning arrangement shall be as shown in Fig. 2.

3.2 Method of Assembly — A ring, made in two or more sections (*see* Table 1), with spur gear cut on its periphery, is fixed to the intermediate trunking of the ventilator. A driving pinion meshes with this ring and is operated by a rod, fitted with handle to facilitate easy turning. The guide roller assembly is fitted to the intermediate trunking in such a manner that the roller projects inwards through the intermediate trunking. In addition, in the case of large size ventilators, a central guide tube is fitted internally with bearings attached to the intermediate trunking. A pivot rod is attached to the bottom end of the guide tube and bears on a spherically seated washer, placed in the pivot bearing. The pivot bearing is placed centrally and fitted on to the cross braces, which are welded to the coaming. Thus, with the help of rollers and the guide tube, smooth operation of turning the ventilator is achieved.

* Rules for rounding off numerical values (*revised*).

3.2.1 *Wheel and Pinion Arrangement* — The wheel shall be bolted on to the angle iron by countersunk screws as shown in Fig. 3. The angle iron shall be riveted to intermediate trunking. The rivets shall be of 6 mm diameter and pitched at 48 mm. The dimensions of the wheel and pinion arrangement shall be as given in Table 1 and Fig. 3.

TABLE 1 DIMENSIONS OF WHEEL AND PINION ARRANGEMENT

(*Clauses* 3.2; 3.2.1, and *Fig.* 3)

(All dimensions in millimetres.)

Nominal Size	D_1	D_2	Pitch Diameter	Number of Teeth	Number of Sections of Wheel
400	427	510	561·8	42	2
450	477	560	615·3	46	2
500	528	612	668·8	50	2
550	578	662	722·3	54	3
600	628	712	762·4	57	3
700	728	812	882·8	66	3
800	828	912	963·1	72	4
900	928	1 012	1 070·1	80	4
1 000	1 030	1 113	1 177·1	88	4
1 100	1 130	1 213	1 270·7	95	5
1 250	1 280	1 363	1 444·0	108	5
1 400	1 430	1 513	1 578·4	118	6
1 600	1 630	1 713	1 791·5	134	6

3.2.2 *Guide Rollers* — The guide roller assembly and details shall be as shown in Fig. 4. The roller when in position shall be 2 mm clear of the ventilator coaming. The number of rollers used for different nominal sizes of the ventilators shall be as given below:

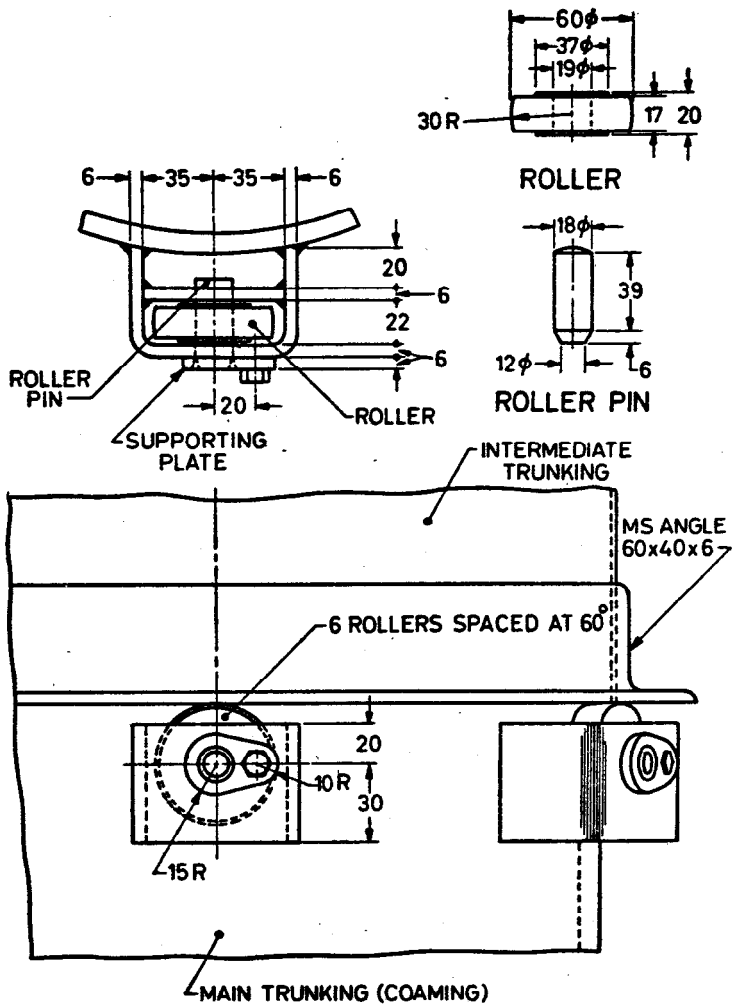
Nominal Size mm	*Number of Rollers*
400 to 700	3
800 to 1 100	4
1 250 to 1 600	6

3.2.2.1 The roller bracket shall be welded to the intermediate trunking. The roller shall be kept in place by the roller pin which shall be prevented from jumping out by the provision of a split pin.

3.2.3 *Turning Handles* — The details of turning handle shall be as shown in Fig. 5.

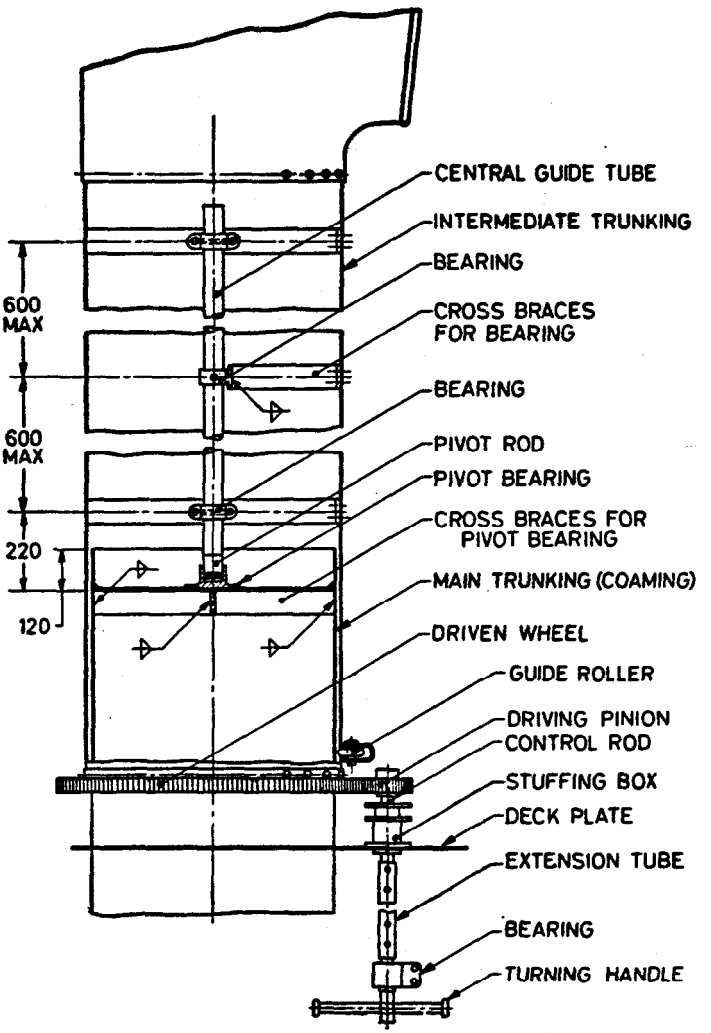
3.2.4 *Central Guide Tube and Pivot Bearing* — The details of guide tube and pivot bearing shall be as shown in Fig. 6.

3.2.4.1 *Central guide tube and bearing* — The details of guide tube and bearing shall be as shown in Fig. 7.



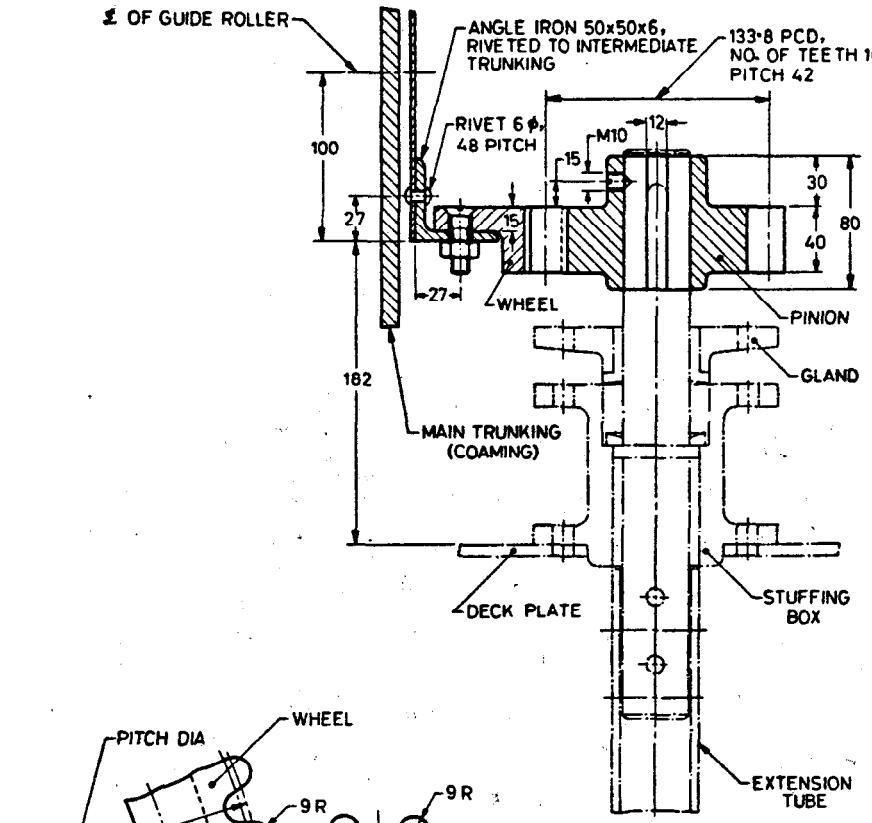
All dimensions in millimetres.

FIG. 1 ASSEMBLY AND DETAILS OF TYPE A MECHANICAL TURNING ARRANGEMENT FOR STEEL COWL VENTILATORS



All dimensions in millimetres.

FIG. 2 NOMENCLATURE AND ASSEMBLY OF TYPE B MECHANICAL TURNING ARRANGEMENT FOR STEEL COWL VENTILATORS



All dimensions in millimetres.

FIG. 3 ASSEMBLY AND DETAILS OF WHEEL AND PINION

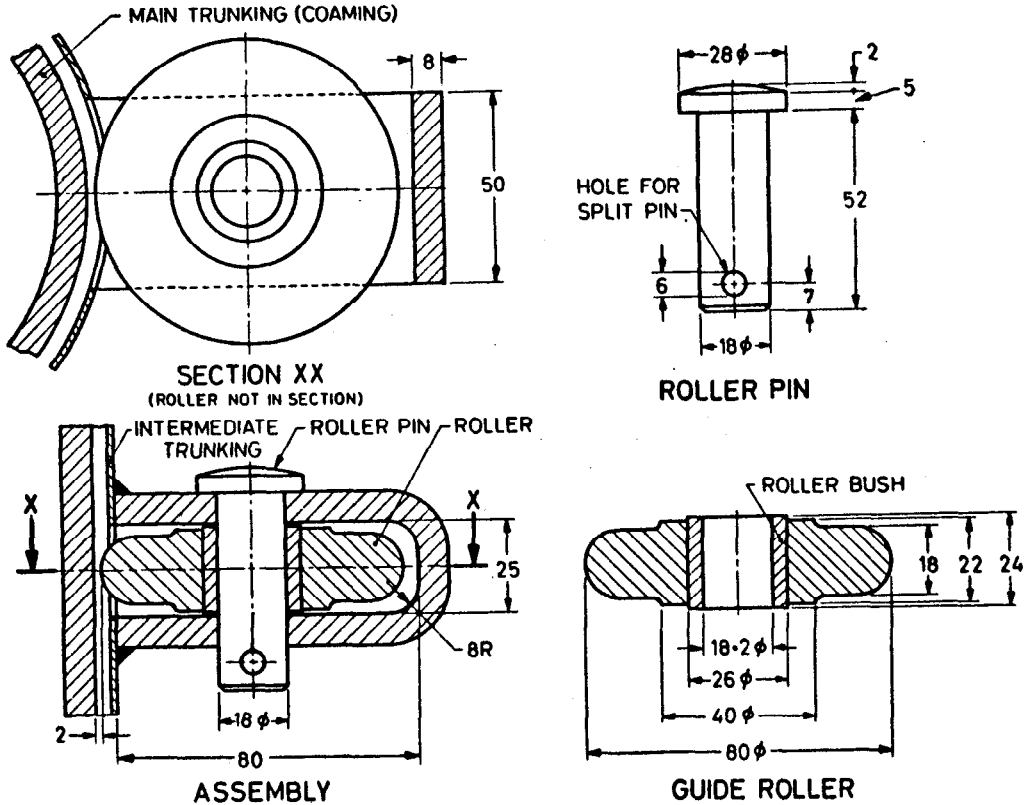


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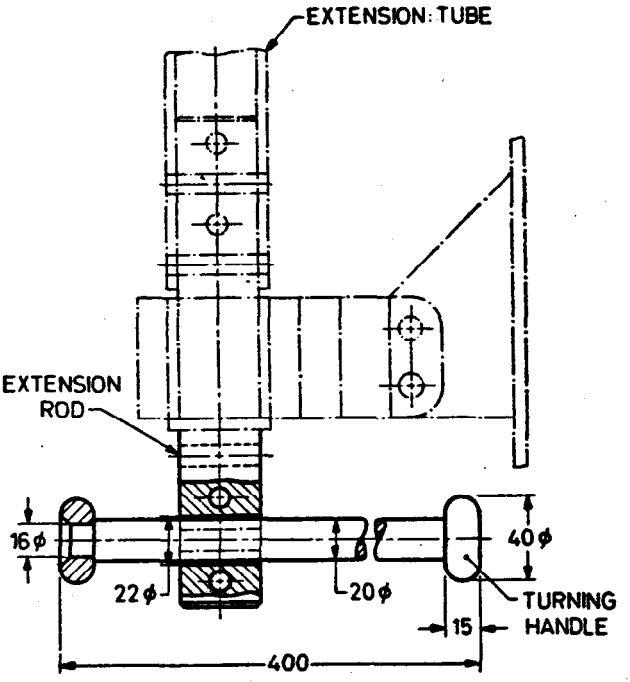
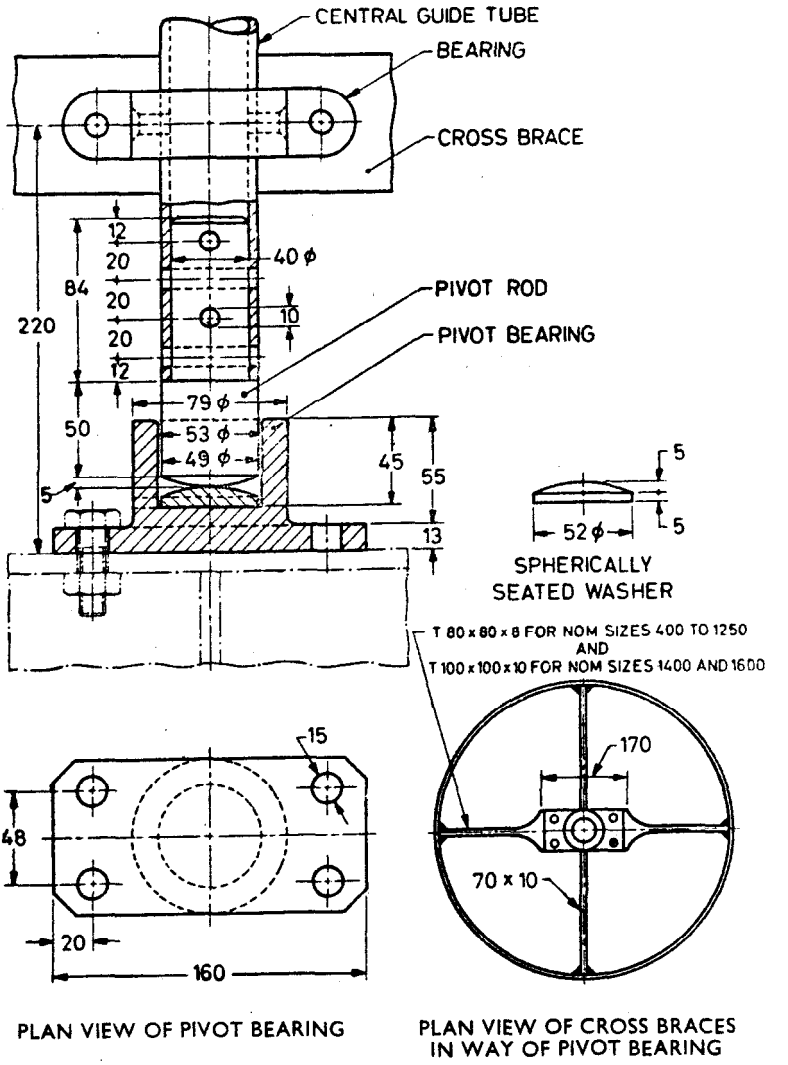
FIG. 4 ASSEMBLY AND DETAILS OF GUIDE ROLLER



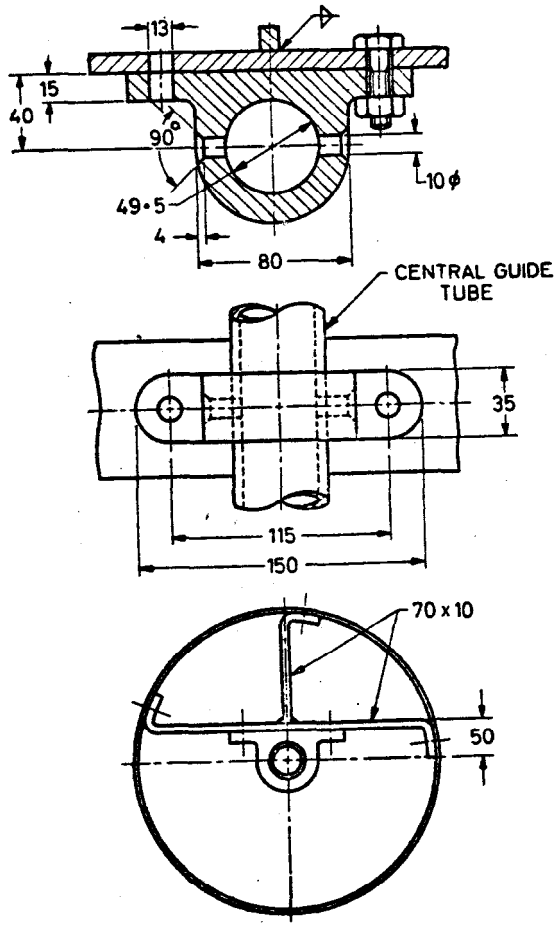
All dimensions in millimetres.

FIG. 5 DETAILS OF TURNING HANDLE



All dimensions in millimetres.

FIG. 6 DETAILS OF CENTRAL GUIDE TUBE AND PIVOT BEARING



PLAN VIEW OF CROSS BRACES IN WAY OF BEARING

All dimensions in millimetres.

FIG. 7 DETAILS OF CENTRAL GUIDE TUBE AND BEARING

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